

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (original) An image transform method, comprising:

- (a) first filtering an input two-dimensional real-valued digital image with respect to a first dimension, said first filtering including a first lowpass filtering to yield a lowband and a first highpass filtering to yield a highband;
- (b) second filtering said lowband from step (a) with respect to a second dimension, said second filtering including a second lowpass filtering to yield a low-lowband and a second highpass filtering to yield a high-lowband; and
- (c) third filtering said highband from step (a) with respect to said second dimension, said third filtering including a third lowpass filtering to yield a low-highband, a third highpass filtering to yield a first high-highband, and a fourth highpass filtering to yield a second high-highband, wherein said third and fourth highpass filterings have impulse response z-transforms as complex conjugates.

Claim 2 (original) The method of claim 1, wherein:

- (a) said first filtering is polyphase with 3 phases.

Claim 3 (original) The method of claim 2, wherein:

- (a) said second and third filterings are each polyphase with 3 phases.

Claim 4 (original) The method of claim 1, wherein:

- (a) said first lowpass filter has a passband approximating the frequency range  $[-\pi/3, \pi/3]$  and said first highpass filter has a passband approximating the frequency range  $[\pi/3, \pi]$ ; and

(b) prior to said second filtering, downsampling said lowband by a factor of 3 with respect to said first dimension.

Claim 5 (original) The method of claim 4, wherein:

(a) after said second filtering, downsampling each of said low-lowband and said high-lowband by a factor of 3 with respect to said second dimension.

Claim 6 (original) The method of claim 1, wherein:

(a) prior to said third filtering, downsampling said highband by a factor of 3 with respect to said first dimension.

Claim 7 (original) The method of claim 6, wherein:

(a) after said third filtering, downsampling each of said low-highband, said first high-highband, and said second high-highband by a factor of 3 with respect to said second dimension.

Claim 8 (original) The method of claim 1, wherein:

(a) said first lowpass and first highpass filterings corresponds to a real scaling function and a complex wavelet, respectively.

Claim 9 (original) The method of claim 1, further comprising:

(a) repeating steps (a)-(c) of claim 1 for an input derived from said low-lowband.

Claim 10 (original) A non-redundant, complex-wavelet transformer for two-dimensional images, comprising:

(a) a first one-dimensional polyphase filter bank for input real-valued, two-dimensional digital images, said first filter bank with three phase filters and a lowpass output and a positive-frequency highpass output;

(b) a second one-dimensional polyphase filter bank coupled to the lowpass output of said first filter bank, said second filter bank with three phase filters and a lowpass output and a positive-frequency highpass output; and

(c) a third one-dimensional polyphase filter bank coupled to the highpass output of said first filter bank, said third filter bank with three phase filters and a lowpass output, a positive-frequency highpass output, and a negative-frequency highpass output.

Claim 11 (original) The transformer of claim 10, wherein:

(a) said first, second, and third filter banks are implemented as programs on a programmable processor.

Claim 12 (original) A digital camera, comprising:

(a) a sensor;

(b) an image pipeline coupled to said sensor, said image pipeline including an image compressor with

(i) a first one-dimensional polyphase filter bank for input real-valued, two-dimensional digital images, said first filter bank with three phase filters and a lowpass output and a positive-frequency highpass output;

(ii) a second one-dimensional polyphase filter bank coupled to the lowpass output of said first filter bank, said second filter bank with three phase filters and a lowpass output and a positive-frequency highpass output; and

(iii) a third one-dimensional polyphase filter bank coupled to the highpass output of said first filter bank, said third filter bank with three phase filters and a lowpass output, a positive-frequency highpass output, and a negative-frequency highpass output.

Claim 13 (original) The camera of claim 12, wherein:

(a) said first, second, and third filter banks are implemented as programs on a programmable processor.